Claims 9-11 stand rejected under the second paragraph of 35 U.S.C. 112 for a variety of reasons. It is respectfully submitted that the foregoing amendments overcome these rejections in providing proper antecedent basis for all of the terminology currently in the claims.

Claims 1-4 remain rejected under 35 U.S.C. 102(b) as being anticipated by Harnett, U.S. Patent No. 3,309,437.

Claims 5-8 remain rejected under 35 U.S.C. 103(a) as unpatentable over Harnett in view of Koppelman, U.S. Patent No. 4,127,391 for the reasons stated in Paper No. 2 dated October 5, 2000.

Claims 9-12 stand rejected under 35 U.S.C. 103(a) as unpatentable over Harnett in view of Kuroda JP-0811287619A. This last rejection is based on premise that this latter Japanese patent that teaches laminated sheets comprising a core of charcoal powder and activated carbon powder would when combined with the teachings of Harnett somehow suggest the instantly claimed product. It is respectfully submitted that the foregoing amendment incorporated by the substitution of new claim 13 that specifies that the "core" is a carbon foam as clearly taught in the specification obviates any applicability of Kuroda to the instantly claimed invention.

Insofar as the previously made and reiterated rejections are concerned, Applicant can only reiterate its previously submitted arguments supplemented by further notes.

As previously stated:

Applicant would first point out that Harnett's materials are derived from petroleum coke, i.e. a petroleum derived (not coal based) material that has already been heated to about 600° C prior to application in Harnett's process. Thus, the materials of Harnett when placed in his process have already been largely "devolatalized" (but not foamed) and are therefore unable to undergo the "foaming" described in the instant application and therefore are incapable of achieving the low density levels described and claimed by Applicant. Harnett heats a bed of coke (devolatalized and petroleum based) particles to a temperature of between about 600 and 1000°C to partially or completely calcine the coke, calcination (and not foaming) occurring at temperatures above about 600° C. Under these conditions and with this starting material, no foaming takes place, although some mass loss may occur, the result is an at least partially sintered coke body and although the body may exhibit some degree of porosity, it is clearly not a foam by any conventional definition.

The coal starting materials of the instant invention typically comprise greater than about 30% volatiles. For example, bituminous coal typically contains volatile levels of about 38-39% while Harnett specifically states at Column 3, lines 69 through 74, "If the volatile matter content of the particles is above 25%, then the

mass tends to melt or flow or boil when heated pursuant to desired baking schedules, making them impractical for normal production methods." Thus clearly the starting materials of Harnett are different than those of the instant application, as are the products of the two processes. Since Harnett's starting material is a calcined petroleum coke it will necessarily comprise lower volatiles content than the starting materials of the instantly claimed invention and consequently, will not foam.

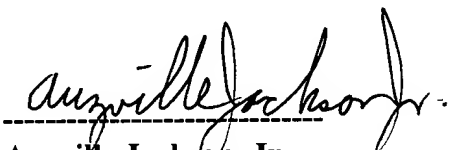
Additionally, Applicant is unable to understand the Examiner's allegation that claimed apparent density of between about 0.1g/cc and 0.8 g/cc is anticipated by Harnett's disclosure of a material having an apparent density of 0.93 g/cc "because about 0.8 g/cc reads on 0.93 g/cc". Surely no one skilled in the art would equate an apparent density of "0.93 g/cc" with " a density of about 0.8 g/cc" and any rejection based on such an allegation is clearly improper and should be withdrawn.

Applicant having discussed the inapplicability of and the error in the rejection of claims 1- 4 over Harnett hereby reiterates that the same arguments apply equally to the rejection of claims in combination with Koppelman. Harnett starts with a petroleum coke material, and does not achieve foaming. Koppelman adds nothing to the disclosure of Harnett since Koppelman makes no attempt to produce a controlled foam; changes the chemical composition of the coal in the autoclave process and indicates that the finished product is a solid fuel and not a foam as described and claimed by Applicant in the instant application.

Furthermore, the combination with Koppelman adds nothing to the teachings of Harnett. The process of Koppelman is simply an agglomeration of low sulfur bituminous coal fines by autoclave treatment at elevated temperature and pressure. At column 4, lines 40ff it is positively stated, " The particle size of the bituminous fines is not important in the practice of the present invention in that agglomeration of the particles occurs during the reaction step." Thus any suggestion that Koppelman suggests any type of foaming process is clearly similarly improper and even in combination with Harnett cannot be said to teach the instantly claimed invention.

In view of the foregoing amendments to the specification and claims and the arguments presented hereinabove, it is respectfully submitted that the claims as now submitted stand in condition for allowance, and the same is respectfully requested. Absent Allowance, Applicant respectfully requests entry of the foregoing amendments so as to place the application in proper condition for appeal.

Respectfully Submitted,



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1[)] - - . - -A semi-crystalline, largely isotropic, porous coal-based product produced from particulate coal of a small diameter, having a density of between about 0.1 and about 0.8 g/cm$_3$ and a thermal conductivity below about 1 W/m/°K.

2[)] - - . - -The porous coal-based product of claim 1 having a compressive strength below about 6000 psi.

3[)] - - . - -The porous coal-based product of claim 1 that has been carbonized.

4[)] - - . - -The porous coal-based product of claim 1 that has been graphitized.

5[)] - - . - -A method for producing a porous coal-based product from coal comprising:

A) comminuting said coal to a small particle size to form a ground coal;

B) placing said ground coal in a mold;

C) heating said ground coal in said mold under a non-oxidizing atmosphere to a temperature of between about 300° C and about 700° C and soaking at this

temperature for a period of from about 10 minutes to about 12 hours to form a preform; and

D) controllably cooling said preform.

6[)] - - . - -The method of claim 5 wherein said inert atmosphere is applied at a pressure of from about 0 psi up to about 500 psi.

7[)] - - . - -The method of claim 5 wherein said temperature is achieved using a heat-up rate of between about 1° C to about 20° C per minute.

8[)] - - . - -The method of claim 5 wherein said controlled cooling is accomplished at a rate of less than about 10° C/min to a temperature of about 100° C.

9[)] - - . - - (Rewritten) The laminated sheet product of claim [12] - - 13 - - wherein said skins comprise a [material] - - member - - selected from the group consisting of aluminum, steel, polymer sheet, [inconel, titanium, refractory metals,] fiber reinforced polymer sheet and paper.

10[)] - - . - -(Rewritten) The laminated sheet product of claim [12] - - 13 - - wherein said [sheet] - - carbon foam - - core has been carbonized.

11[)] - - . - -(Rewritten)The laminated sheet product of claim [12] - -13 - - wherein said [sheet] - - carbon foam - - core is graphitized.

[12) A laminated sheet product comprising:

A) a core of a semi-crystalline, largely isotropic, porous coal-based product produced from particulate coal of a small diameter, having a density of between about 0.1 and about 0.8 g/cm^3 and a thermal conductivity below about 1 W/m/°K.]

- - 13. A laminated sheet comprising:

A) a pair of skins laminated to either side of;

B) a - - carbon foam - - core of a semi-crystalline, largely isotropic, porous coal based product produced from particulate coal exhibiting a free swell index of between about 3.5 and about 5.0 and of a small diameter, having a density of between about 0.1 and about 0.8 g/cm^3 and a thermal conductivity below about 1 W/m/°K. - -